

IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION

WEATHERFORD INTERNATIONAL, §  
INC. and WEATHERFORD/LAMB, INC. §  
§  
v. § NO. 2:09-CV-261-CE  
§  
HALLIBURTON ENERGY SERVICES, §  
INC., ET AL §

**MEMORANDUM OPINION AND ORDER**

**I. INTRODUCTION**

Plaintiffs Weatherford International, Inc. and Weatherford/Lamb, Inc. (collectively, “Weatherford”) filed suit against Halliburton Energy Services, Inc. and General Plastics & Composites, L.P. (collectively, “Halliburton” or “Defendants”) on August 27, 2009, alleging infringement of U.S. Patent Nos. 6,712,153 (“the ’153 Patent”) and 7,124,831 (“the ’831 Patent”). On May 21, 2010, Halliburton counter-claimed against Weatherford alleging infringement of U.S. Patent Nos. 6,695,050 (“the ’050 Patent”) and 5,540,279 (“the ’279 Patent”). The parties, however, subsequently stipulated to the dismissal of the ’050 Patent (Dkt. No. 133). This memorandum opinion and order, therefore, addresses the parties’ various claim construction disputes regarding only the ’279 Patent.

The ’279 Patent is entitled “Downhole Tool Apparatus With Non-Metallic Packer Element Retaining Shoes” and directed “generally to downhole tools for use in well bores and methods of drilling such apparatus out of well bores, and more particularly, to such tools having drillable components made at least partially of non-metallic materials, such as engineering grade

plastics, composites, and resins.” ’279 Patent at 1:8-14. The Abstract of the ’279 Patent described the claimed invention as follows:

An improved downhole tool apparatus including, but not limited to, packers and bridge plugs which more fully utilize highly stressed non-metallic components, including slips, slip wedges, and packer element retaining shoes than prior tools. The non-metallic packer element retaining shoes of the present invention are preferably made of separate shoe segments initially held in place by at least one retaining band. Such non-metallic packer element shoes do away with troublesome prior art metallic shoes and backups which tended to spin upon each other or about the mandrel while milling or drilling the tool out of a wellbore. Therefore, the subject invention increases the ability to drill or mill downhole tools out of a well bore in less time than it would take with using conventional or non-conventional drilling or milling techniques or equipment.

*Id.* at Abstract. Claim 1 of the ’279 Patent is representative of the claims of the ’279 Patent and is reproduced below:

A downhole apparatus for use in a wellbore comprising:

- a) a mandrel having an axial centerline;
- b) a slip means disposed on the mandrel for grippingly engaging the wellbore when set into position;
- c) at least one packer element to be axially retained about the mandrel and located at a preselected position along the mandrel defining a packer element assembly; and
- d) at least one packer element retaining shoe made of a non-metallic material for axially retaining the at least one packer element about the mandrel and the shoe comprising a plurality of shoe segments and having means for retaining the segments in an initial position about the mandrel.

*Id.* at 9:31-45.

The court held a *Markman* hearing on May 18, 2011. After considering the submissions and the arguments of counsel, the court issues the following order concerning the parties’ claim construction disputes.

## **II. GENERAL PRINCIPLES GOVERNING CLAIM CONSTRUCTION**

“A claim in a patent provides the metes and bounds of the right which the patent confers on the patentee to exclude others from making, using or selling the protected invention.” *Burke, Inc. v. Bruno Indep. Living Aids, Inc.*, 183 F.3d 1334, 1340 (Fed. Cir. 1999). Claim construction is an issue of law for the court to decide. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970-71 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996).

To ascertain the meaning of claims, the court looks to three primary sources: the claims, the specification, and the prosecution history. *Markman*, 52 F.3d at 979. The specification must contain a written description of the invention that enables one of ordinary skill in the art to make and use the invention. *Id.* A patent’s claims must be read in view of the specification, of which they are a part. *Id.* For claim construction purposes, the description may act as a sort of dictionary, which explains the invention and may define terms used in the claims. *Id.* “One purpose for examining the specification is to determine if the patentee has limited the scope of the claims.” *Watts v. XL Sys., Inc.*, 232 F.3d 877, 882 (Fed. Cir. 2000).

Nonetheless, it is the function of the claims, not the specification, to set forth the limits of the patentee’s invention. Otherwise, there would be no need for claims. *SRI Int’l v. Matsushita Elec. Corp.*, 775 F.2d 1107, 1121 (Fed. Cir. 1985) (en banc). The patentee is free to be his own lexicographer, but any special definition given to a word must be clearly set forth in the specification. *Intellicall, Inc. v. Phonometrics, Inc.*, 952 F.2d 1384, 1388 (Fed. Cir. 1992). Although the specification may indicate that certain embodiments are preferred, particular embodiments appearing in the specification will not be read into the claims when the claim language is broader than the embodiments. *Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc.*, 34 F.3d 1048, 1054 (Fed. Cir. 1994).

This court’s claim construction decision must be informed by the Federal Circuit’s decision in *Phillips v. AWH Corporation*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). In *Phillips*, the court set forth several guideposts that courts should follow when construing claims. In particular, the court reiterated that “the *claims* of a patent define the invention to which the patentee is entitled the right to exclude.” 415 F.3d at 1312 (emphasis added) (*quoting Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). To that end, the words used in a claim are generally given their ordinary and customary meaning. *Id.* The ordinary and customary meaning of a claim term “is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Id.* at 1313. This principle of patent law flows naturally from the recognition that inventors are usually persons who are skilled in the field of the invention and that patents are addressed to and intended to be read by others skilled in the particular art. *Id.*

The primacy of claim terms notwithstanding, *Phillips* made clear that “the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Id.* Although the claims themselves may provide guidance as to the meaning of particular terms, those terms are part of “a fully integrated written instrument.” *Id.* at 1315 (*quoting Markman*, 52 F.3d at 978). Thus, the *Phillips* court emphasized the specification as being the primary basis for construing the claims. *Id.* at 1314-17. As the Supreme Court stated long ago, “in case of doubt or ambiguity it is proper in all cases to refer back to the descriptive portions of the specification to aid in solving the doubt or in ascertaining the true intent and meaning of the language employed in the claims.” *Bates v. Coe*, 98 U.S. 31, 38 (1878). In

addressing the role of the specification, the *Phillips* court quoted with approval its earlier observations from *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998):

Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction.

*Phillips*, 415 F.3d at 1316. Consequently, *Phillips* emphasized the important role the specification plays in the claim construction process.

The prosecution history also continues to play an important role in claim interpretation. Like the specification, the prosecution history helps to demonstrate how the inventor and the PTO understood the patent. *Id.* at 1317. Because the file history, however, “represents an ongoing negotiation between the PTO and the applicant,” it may lack the clarity of the specification and thus be less useful in claim construction proceedings. *Id.* Nevertheless, the prosecution history is intrinsic evidence that is relevant to the determination of how the inventor understood the invention and whether the inventor limited the invention during prosecution by narrowing the scope of the claims. *Id.*

*Phillips* rejected any claim construction approach that sacrificed the intrinsic record in favor of extrinsic evidence, such as dictionary definitions or expert testimony. The *en banc* court condemned the suggestion made by *Texas Digital Systems, Inc. v. Telegenix, Inc.*, 308 F.3d 1193 (Fed. Cir. 2002), that a court should discern the ordinary meaning of the claim terms (through dictionaries or otherwise) before resorting to the specification for certain limited purposes. *Phillips*, 415 F.3d at 1319-24. The approach suggested by *Texas Digital*—the assignment of a limited role to the specification—was rejected as inconsistent with decisions holding the

specification to be the best guide to the meaning of a disputed term. *Id.* at 1320-21. According to *Phillips*, reliance on dictionary definitions at the expense of the specification had the effect of “focus[ing] the inquiry on the abstract meaning of words rather than on the meaning of claim terms within the context of the patent.” *Id.* at 1321. *Phillips* emphasized that the patent system is based on the proposition that the claims cover only the invented subject matter. *Id.* What is described in the claims flows from the statutory requirement imposed on the patentee to describe and particularly claim what he or she has invented. *Id.* The definitions found in dictionaries, however, often flow from the editors’ objective of assembling all of the possible definitions for a word. *Id.* at 1321-22.

*Phillips* does not preclude all uses of dictionaries in claim construction proceedings. Instead, the court assigned dictionaries a role subordinate to the intrinsic record. In doing so, the court emphasized that claim construction issues are not resolved by any magic formula. The court did not impose any particular sequence of steps for a court to follow when it considers disputed claim language. *Id.* at 1323-25. Rather, *Phillips* held that a court must attach the appropriate weight to the intrinsic sources offered in support of a proposed claim construction, bearing in mind the general rule that the claims measure the scope of the patent grant.

The patents-in-suit include claim limitations that fall within the scope of 35 U.S.C. § 112, ¶ 6. “An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure. . . in support thereof, and such claim shall be construed to cover the corresponding structure . . . described in the specification and equivalents thereof.” 35 U.S.C. § 112, ¶ 6. The first step in construing a means-plus-function limitation is to identify the recited function. *See Micro Chem., Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1258 (Fed. Cir. 1999). The second step in the analysis is to identify

in the specification the structure corresponding to the recited function. *Id.* The “structure disclosed in the specification is ‘corresponding’ structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim.” *Medical Instrumentation and Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205, 1210 (Fed. Cir. 2003) (citing *B. Braun v. Abbott Labs*, 124 F.3d 1419, 1424 (Fed. Cir. 1997)). The patentee must clearly link or associate structure with the claimed function as part of the quid pro quo for allowing the patentee to express the claim in terms of function pursuant to § 112, ¶ 6. *See id.* at 1211; *see also Budde v. Harley-Davidson, Inc.*, 250 F.3d 1369, 1377 (Fed. Cir. 2001). The “price that must be paid” for use of means-plus-function claim language is the limitation of the claim to the means specified in the written description and equivalents thereof. *See O.I. Corp. v. Tekmar Co.*, 115 F.3d 1576, 1583 (Fed. Cir. 1997). “If the specification does not contain an adequate disclosure of the structure that corresponds to the claimed function, the patentee will have ‘failed to particularly point out and distinctly claim the invention as required by the second paragraph of section 112,’ which renders the claim invalid for indefiniteness.” *Blackboard, Inc. v. Desire2Learn, Inc.*, 574 F.3d 1371, 1382 (Fed. Cir. 2009) (quoting *In re Donaldson Co.*, 16 F.3d 1189, 1195 (Fed. Cir. 1994) (en banc)). It is important to determine whether one of skill in the art would understand the specification itself to disclose the structure, not simply whether that person would be capable of implementing the structure. *See Atmel Corp. v. Info. Storage Devices, Inc.*, 198 F.3d 1374, 1382 (Fed. Cir. 1999); *Biomedino*, 490 F.3d at 953. Fundamentally, it is improper to look to the knowledge of one skilled in the art separate and apart from the disclosure of the patent. *See Medical Instrumentation*, 344 F.3d at 1211-12. “[A] challenge to a claim containing a means-plus-function limitation as lacking structural support requires a finding, by clear and convincing evidence, that the specification lacks disclosure of

structure sufficient to be understood by one skilled in the art as being adequate to perform the recited function.” *Budde*, 250 F.3d at 1376-77.

### III. TERMS IN DISPUTE

#### a. “Axially Retaining” (‘279 Patent – 1, 2, 3, 4, 7, 8, 9, 10)

Halliburton’s Proposed Construction	Weatherford’s Proposed Construction
<p><b>“axially retaining ... about the mandrel”:</b> “providing support to the ends of the one or more packer elements”</p> <p><b>“axially retaining”:</b> “providing support to the ends of the one or more packer elements”</p>	<p><b>“axially retaining ... about the mandrel” :</b> “limiting movement along the mandrel”</p> <p><b>“axially retaining”:</b> “limiting movement along the mandrel”</p>

Claim 1 of the ‘279 Patent recites: “at least one packer element *retaining shoe* made of a non-metallic material for *axially retaining* the at least one packer element about the mandrel....” (emphases added). Halliburton argues that the court should construe the “axially retaining” terms to mean “providing support to the ends of the one or more packer elements.” Halliburton notes that the purpose of retaining shoes is to keep the packing element in place when the tool is subject to extreme temperatures and pressures in a wellbore. The shoes must allow the packer element to expand outwardly to contact the casing wall, but they also must prevent the packer element from expanding uphole or downhole as this would weaken the seal of the packer element. The patentees describe this and other concepts in terms of axial (uphole/downhole) and radial (inward/outward) movement. *See, e.g.*, ’279 patent at 5:20-26 (“Spacer ring 12 provides an abutment which serves to axially retain slip segments 18 which are positioned circumferentially about mandrel 4. Slip retaining bands 16 serve to radially retain slips 18 in an initial circumferential position about mandrel”). As such, Halliburton argues that, by stating that the retaining shoe is “for axially retaining the at least one packer element about the mandrel,” the claims clarify that when the tool is set, the retaining shoe should minimize axial extrusion of the

packer elements, as opposed to radial extrusion. Halliburton contends that the retaining shoes in both patents accomplish these goals by supporting the ends of the packer elements and allowing the middle portion of the packer elements to contact the casing wall. *See id.* at 5:41-5:43 (“At both ends of packer element assembly 28 are packer shoes 26 which provide axial support to respective ends of packer element assembly 28.”). In sum, Halliburton argues that its proposed construction explains these concepts and should therefore be adopted.

Weatherford, on the other hand, argues that the “axially retaining” terms should be construed to mean “limiting movement along the mandrel.” Weatherford contends that the intrinsic meaning of the phrase “axially retained” implies that an object is retained (e.g., contained or held in place) about the mandrel in an axial direction. Weatherford’s construction, therefore, equates the term “retaining” to the concept of “limiting movement.” Weatherford, however, fails to offer any intrinsic or extrinsic evidence to support its contention that the term “retaining” should be equated with “limiting movement.” In fact, the phrase “limiting movement” appears nowhere in the specification of the ’279 Patent. Furthermore, as Halliburton points out, Weatherford’s proposed construction is inconsistent with the overall design and function of the claimed invention. The ’279 Patent is concerned with downhole tools that use a setting mechanism. According to this design, all of the functional components of a downhole tool (including slips, retaining shoes, and the packer element assembly) must be able to slide relative to the mandrel. During the setting operation, the retaining shoes and packer element must move along the mandrel so that they can reach the set position. If the retaining shoes “limit movement” of the packing element along the mandrel, as required by Weatherford’s proposal, the tool would not set properly. Considering this, the court rejects Weatherford’s proposed construction.

The court agrees with Halliburton that its proposed construction – i.e., “axially retaining” means “providing support to the ends of the one or more packer elements” – is supported by the intrinsic record. Furthermore, the court rejects Weatherford’s criticisms of Halliburton’s construction. First, contrary to Weatherford’s contentions, Halliburton’s proposal reads logically within the language of the claim. When substituted into the last element of Claim 1 of the ’279 patent, the claim would read: “d) at least one packer element retaining shoe made of a non-metallic material for [providing support to the ends of the one or more packer elements] and the shoe comprising a plurality of shoe segments and having means for retaining the segments in an initial position about the mandrel.” Second, Halliburton’s proposed “providing support” is pulled directly from the specification. *See* ’279 Patent at 5:41-5:43 (“At both ends of packer element assembly 28 are packer shoes 26 which *provide axial support to respective ends of packer element assembly 28.*”). Third, Halliburton’s proposal remains true to the claim language by distinguishing between the axial and radial directions – i.e., it requires the support to be provided *to the ends* of the packer elements or packer element assembly. As such, the court adopts Halliburton’s proposed construction of the “axially retaining” terms and, therefore, construes the terms to mean “providing support to the ends of the one or more packer elements.”

**b. “Packer Element Retaining Shoe” (’279 Patent – 1, 2, 3, 4, 7, 8, 9, 10)**

Halliburton’s Proposed Construction	Weatherford’s Proposed Construction
“component <del>made of nonmetallic material</del> <sup>1</sup> that provides support for the ends of the one or more packer elements”	“a component that <i>contacts and contains</i> an expandable element of the packer element assembly when in the set position”

Claim 1 of the ’279 Patent is representative of the use of the term “packer element retaining shoe” and recites: “at least one *packer element retaining shoe* made of a non-metallic

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<sup>1</sup> During the claim construction hearing, Halliburton agreed with the court that its proposed “made of nonmetallic material” limitation was not necessary and should not be included in its proposed construction. As such, the court will not consider that limitation here.

material for axially retaining the at least one packer element about the mandrel and the shoe comprising a plurality of shoe segments and having means for retaining the segments in an initial position about the mandrel.” The parties’ primary dispute regarding this term is whether there must be direct contact between the retaining shoe and the packer element. Halliburton contends that direct contact between the two components is not necessary, and Weatherford argues the opposite.

Halliburton urges the court to reject Weatherford’s argument because none of the claims requires that the retaining shoes contact the packer elements and the specification of the ’279 Patent does not contain a disclaimer requiring a “contact” limitation. In response, Weatherford argues that for the “retaining shoe” to ”contain” the packer element, the “retaining shoe” must necessarily contact the packer element. According to Weatherford, if there is an intermediary between the object being retained and the retaining object, then the retaining object is not performing the retaining function. As such, Weatherford concludes that, for the retaining shoe to be able to retain or contain the expansion of the packer element to prevent its extrusion, the retaining shoe must directly contact the packer element. Finally, Weatherford argues that the specification of the ’279 Patent defines a “retaining shoe” that contacts the packer elements as “the present invention” because the specification discloses no embodiments depicting a retaining shoe that is not in direct contact with the packing element assembly. *See, e.g.,* ‘279 Patent at 6:20-23, 7:44-47.

The court rejects Weatherford’s contention that the term “retain” should be construed to mean “contains.” The specification of the ’279 Patent explains that the purpose of retaining shoes is to axially retain the packer elements. The specifications further explain that the “retaining shoes” accomplish this purpose by *supporting* the ends of the packer element

assembly. *See* '279 Patent at 6:63-66 (emphasis added) (explaining that the retaining shoes are designed to provide “*end support* for a packer element that is to be retained in an axial direction”) (emphasis added). The specification, however, never requires that the “retaining shoes” contain the packer element assembly. Indeed, the word “contains” suggests that the “retaining shoes” completely eliminate axial protrusion of the packer element. But the patents explain that, given the hazardous environments in which these tools operate, it is nearly impossible to guarantee that any downhole tool will be able to achieve complete containment of the packer elements. *See, e.g.*, '279 Patent at 7:49-54 (describing “non-catastrophic deformation” of the packer element assembly). Considering this, the court rejects Weatherford’s proposed “contains” limitation and adopts Halliburton’s proposed “provides support for the ends of the one or more packer elements” limitation.

Furthermore, the court rejects Weatherford’s contention that the “retaining shoes” must be in direct “contact” with the packer elements. Weatherford argues that its proposal is “necessitated by the specification,” and it cites *SciMed Life Systems Inc. v. Advanced Cardiovascular Systems Inc.*, 242 F.3d 1337, 1343 (Fed. Cir. 2001), for the proposition that a patentee may limit the scope of its claims by describing one embodiment as the invention itself. But Weatherford fails to identify any statement in the specification that expressly equates the present invention to a requirement that the retaining shoes directly contact the packer element. Instead, the portions of the specification identified by Weatherford generically equate embodiments of the present invention with the downhole tools depicted in the figures of the patent. Therefore, the court is not convinced that the patentee defined his invention in terms of a “retaining shoe” that directly contacts the packer elements.

In conclusion, the court rejects Weatherford's proposed construction. The court agrees with Halliburton that its proposed construction accurately captures the '279 Patent's disclosures with regard to the claimed "retaining shoe" – that is, the specification explains that the "retaining shoe" structure is meant to "provide the maximum amount of end support for a packer element that is to be retained in an axial direction." '279 Patent at 6:63-66. As such, the court construes "retaining shoe" to mean "component that provides support for the ends of the one or more packer elements."

### c. "Means For Retaining" ('279 Patent – 1, 2, 3, 4, 7, 8, 9, 10)

Halliburton's Proposed Construction	Weatherford's Proposed Construction
<p><i>This term is subject to 35 U.S.C. § 112 ¶ 6.</i></p> <p><i>The corresponding function is:</i> "retaining the segments in an initial position about the mandrel"</p> <p><i>The corresponding structure is:</i> "retaining bands or an integrally formed ring, and their equivalents"</p>	<p><i>This term is subject to 35 U.S.C. § 112 ¶ 6.</i></p> <p><i>The corresponding function is:</i> "retaining the [shoe] segments in an initial position about the mandrel"</p> <p><i>The corresponding structure is:</i> "one or more retaining bands within their respective grooves"</p> <p>As an alternative, Weatherford proposes: "one or more retaining bands 52 within their respective grooves 54 as shown in Figures 6a and 6b, column 6, lines 34-43, and column 7, lines 4-27 of the '279 patent, and equivalents thereof."</p>

Claim 1 of the '279 Patent recites: "at least one packer element retaining shoe made of a non-metallic material for axially retaining the at least one packer element about the mandrel and the shoe comprising a plurality of shoe segments and having *means for retaining* the segments in an initial position about the mandrel." The parties agree that the term "means for retaining" is subject to construction under 35 U.S.C. § 112 ¶ 6. As discussed above, the first step in construing a means-plus-function limitation is to identify the recited function. *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 296 F.3d 1106, 1113 (Fed. Cir. 2002). The second step

in the analysis is to identify in the specification the structure corresponding to the recited function. *Id.* The parties disagree as to both the appropriate function of the “means for retaining” and the corresponding structure.

As to the function, Halliburton argues that the function of the “means for retaining” is “retaining the segments in an initial position about the mandrel.” Weatherford, on the other hand, argues that appropriate function of the “means for retaining” is limited to “retaining the *shoe* segments in an initial position about the mandrel.” During the claim construction hearing, Halliburton conceded that Weatherford’s proposed function, which specifies that the “shoe” segments are the elements being retained, was not incorrect. As such, the court agrees with Weatherford that the function of the “means for retaining” is “retaining the shoe segments in an initial position about the mandrel.”

With regard to the structure corresponding to the function of “retaining the shoe segments in an initial position about the mandrel,” the parties’ main dispute is whether the specification of the ’279 Patent clearly links “integrally formed rings” as corresponding structure. The parties do not dispute that the specification discloses two types of retaining means: (1) retaining bands; and (2) integrally formed rings. With regard to the retaining bands, the Summary of the Invention section discloses a multitude of co-acting shoe segments that are held together by at least one retaining band. ‘279 Patent at 4:15-28. The abstract provides that “the non-metallic packer element retaining shoes of the present invention are preferably made of separate shoe segments initially held in place by *at least one retaining band*.” Furthermore, Figure 6a, which shows the “preferred packer shoe and retaining band of the present invention,” shows the shoe retaining band 52 that *accommodates grooves 54*. *Id.* at 4:58-62. Considering this, the court agrees with Weatherford that the retaining bands 52 and their associated grooves 54 are clearly linked as

structure corresponding to the function of “retaining the shoe segments in an initial position about the mandrel.” Accordingly, the court adopts Weatherford’s proposed construction of the corresponding structure as including: “one or more retaining bands 52 within their respective grooves 54 as shown in Figures 6a and 6b, column 6, lines 34-43, column 7, lines 4-27 of the ‘279 Patent, and equivalents thereof.”

Furthermore, the court rejects Halliburton’s contention that “integrally formed rings” should be included in the literal structure corresponding to the function of the “retaining means.” There is no mention in the specification of an integrally formed ring structure corresponding to the shoe segment retaining means. In contrast, the only disclosure of an integrally formed ring is in the Summary of the Invention section in regards to a *slip* segment retaining means, which in one embodiment includes “at least one retaining band extending at least partially around the slips” and in another embodiment is a “ring portion integrally formed within the slips.” *Id.* at 3:l-59; 4:l-6. Halliburton relies on this disclosure for its proposed construction, but the disclosure is for a different structural component – the *slips*. Thus, even if the integrally formed ring was capable of performing the recited function, the specification does not “clearly link” the integrally formed ring structure to the recited function of retaining the *shoe* segments. *See Medtronic, Inc. v. Advanced Cardiovascular Sys., Inc.*, 284 F.3d 1303, 1311-12 (Fed. Cir. 2001).

Finally, the court rejects Halliburton’s argument that construing the structure of the “retaining means” to be limited to retaining bands and their respective grooves violates the doctrine of claim differentiation. Although Claim 5 recites that the shoe retaining means must be comprised of “at least one retaining band,” it also recites the additional limitation that the band must be made of “non-metallic composite material.” The doctrine of claim differentiation is, therefore, not violated.

In conclusion, the court construes the function and structure of the claimed “retaining means” as follows: (1) the function is “retaining the shoe segments in an initial position about the mandrel;” and (2) the corresponding structure is “one or more retaining bands 52 within their respective grooves 54 as shown in Figures 6a and 6b, column 6, lines 34-43, and column 7, lines 4-27 of the ‘279 Patent, and equivalents thereof.”

**d. “A Plurality of Slip/Shoe Segments” (‘279 Patent – 1, 2, 3, 4, 7, 8, 9, 10)**

Halliburton’s Proposed Construction	Weatherford’s Proposed Construction
<p><b>“a plurality of shoe segments”:</b> “two or more sections that encircle the mandrel”</p> <p><b>“a plurality of slip segments”:</b> “tapered sections with teeth or hardened inserts for contacting the well bore”</p>	<p><b>“a plurality of shoe segments”:</b> “two or more individual pieces that together make up the shoe”</p> <p><b>“a plurality of slip segments”:</b> “two or more individual pieces that together make up the slip, each piece having teeth or hardened inserts for grippingly engaging the well bore”</p>

As discussed in the “means for retaining” section, the ‘279 Patent disclose shoes and slips as different components of the downhole tool, each with different functions. Each of these shoes and slips have a “plurality of segments,” and both parties agree that the meaning of segments applies equally to both slips and shoes. The primary dispute is whether the plurality of segments are “individual pieces” (as Weatherford proposes) or are merely “sections” of a continuous or single component (as Halliburton proposes).

The court rejects Halliburton’s argument that the claimed “segments” should be equated to “sections.” First, as used in the specification and claims, “segment” is more limiting than the term “section.” The term “section,” as used in the specification, generally refers to an end portion, which is distinct from how the term “segment” is used in the specification. Indeed, the specification teaches that each “slip segment has two opposing end sections.” *See* ‘279 Patent at

8:14-17. Thus, Halliburton's proposed construction contradicts the specification's use of the terms "section" and "segment."

Second, by arguing that the "segments" are not "individual pieces," Halliburton actually rejects the need for a "means for retaining" of the individual shoe pieces – an express limitation of the claims. As described above, the retaining means is necessary to hold the plurality of individual shoe segments together. If, as Halliburton proposes, a plurality of individual segments do not exist, there is no need for the retaining means, and thus Halliburton's proposal directly contradicts (and essentially eliminates) an express claim limitation.

Third, Claim 4 of the '279 Patent provides that "at least one of the shoe segments is made of a laminated non-metallic composite material." If the claimed "shoe segments" are not separate and individual but part of the same piece (as Halliburton seemingly argues), then Claim 4 would be a nonsensical limitation. If the shoe segments were separate, then different individual segments ("at least one") could be made of different materials. This same analysis also applies for Claim 3 of the '279 Patent.

Fourth, the specification confirms that the "segments" are individual pieces. There is no teaching, embodiment, or disclosure that suggests the shoe segments are not individual or separate pieces. Rather, the '279 Patent explains that "segments" means individual pieces:

In the preferred embodiment, the slip means utilizes *separate slip segments*.

Packer shoe 50 preferably has a plurality of *individual shoe segments* 51 to form a shoe...

FIG. 6A illustrates shoe 50 being made of a total of 8 *shoe segments* to provide a 360o annulus, or encircling, structure .... A lesser amount, or greater amount of shoes segments can be used ...

It is preferred that *six to eight segments* encircle mandrel 4...

‘279 Patent at 3:63-65; 6:46-49; 6:63-67; 8:36-37 (emphases added); *see also* ‘279 Patent at Figures 2C, 6A, and 6B. As such, the court concludes that the specifications of the patents-in-suit contemplate that a “plurality...of segments” means a multitude of individual segments that comprise the shoe or slip. *See, e.g., id.*

In conclusion, the court agrees with Weatherford that “segmented,” when read in light of the claims and specification of the ‘279 Patent, requires “individual pieces.” Furthermore, the court agrees with Weatherford that a “plurality” means “two or more.” *See Dayco Prods., Inc. v. Total Containment, Inc.*, 258 F.3d 1317, 1327-28 (Fed. Cir. 2001) (“In accordance with standard dictionary definitions, we have held that “plurality,” when used in a claim, refers to two or more items, absent some indication to the contrary.”). Finally, with regard to the parties’ proposed construction of “a plurality of slip segments,” the court agrees with Weatherford that its proposed “for grippingly engaging the well bore” limitation is supported by the specification. *See, e.g.,* ‘279 Patent at 3:53-56 (“In a preferred embodiment of the downhole tool, the invention comprises a center mandrel and *slip means disposed on the mandrel for grippingly engaging the well bore* when in a set position.”); 4:2-6 (“whereby the slips are separated so that they can be moved into gripping engagement with the well bore.”). As such, the court adopts the following constructions: (1) “a plurality of shoe segments” means “two or more individual pieces that together make up the shoe;” and (2) “a plurality of slip segments” means “two or more individual pieces that together make up the slip, each piece having teeth or hardened inserts for grippingly engaging the well bore.”

e. “Slip Means” (‘279 Patent – 1, 2, 3, 4, 7, 8, 9, 10)

Halliburton’s Proposed Construction	Weatherford’s Proposed Construction
<p><i>This term is subject to 35 U.S.C. § 112 ¶ 6.</i></p> <p><i>The corresponding function is:</i> “1) not grippingly engage the well bore when in the initial position; 2) a setting action; and 3) grippingly engage the well bore when in the set position.”</p> <p><i>The corresponding structure is:</i> “(1) a slip wedge positioned around the central mandrel; (2) a plurality of slip segments disposed in an initial position around the mandrel; (3) retaining means for holding the slips in the initial position; and (4) a slip support on the opposite side of the slips from the wedge.”</p>	<p><i>This term is <u>not</u> subject to 35 U.S.C. § 112 ¶ 6.</i></p> <p>“slip means” = slips (not a means-plus function limitation)</p> <p><i>Agreed Construction:</i> “grippingly engaging the wellbore” = “contacting and holding firmly the inner surface of the wellbore”</p> <p>Alternatively, if the term is construed as a means-plus-function limitation,</p> <p><i>The corresponding function is:</i> “grippingly engage the well bore when set into position”</p> <p><i>The corresponding structure is:</i> “slips, with or without their inserts”</p>

The ’279 Patent recites: “a *slip means* disposed on the mandrel for grippingly engaging the wellbore when set into position....” The parties dispute whether the term “slip means” is governed by § 112, ¶ 6. Halliburton argues that the term “slip means” should be construed under § 112, ¶ 6. Furthermore, Halliburton’s proposed means-plus-function construction mirrors Judge Godbey’s construction of “slip means” in *Halliburton Energy Servs., Inc. v. Weatherford Int’l, Inc.*, No. 3:07-cv-2144, Dkt. No. 146 (N.D. Tex. July 8, 2010). Halliburton argues that, because Weatherford raises no new arguments with regard to the construction of this term, the court should not deviate from Judge Godbey’s construction.

Weatherford, on the other hand, argues that Judge Godbey’s construction of this term is incorrect for various reasons. First, Weatherford argues that this term is not subject to means-plus-function treatment because the claim language itself “recites structure sufficient to perform the claimed function in its entirety.” *Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1375 (Fed.

Cir. 2003). Weatherford argues that that the term “slips” is an industry-recognized term that describes known downhole components having teeth or sharp edges that perform the recited function of grippingly engaging the well bore when set. Slip segments are represented in the prior art Figures 1, 2A, 2B, and 2C of the ‘279 Patent. As shown in these figures, slip segments 18 may have inserts 34, which aid in grippingly engaging the wellbore. *See* ‘279 Patent at 4:1-6; 8:3-13. Thus, Weatherford argues that because “slips” themselves are known structures that perform the claimed function of “grippingly engaging the wellbore when set into position,” the presumption of a means-plus-function construction created by the “means” term in the claim is rebutted.

The presumption that a term is a means-plus-function limitation “can be rebutted where the claim, in addition to the functional language, recites structure sufficient to perform the claimed function in its entirety.” *Altiris, Inc.*, 318 F.3d at 1375. The court must construe the function of a means-plus-function limitation to “include the limitations contained in the claim language, and only those limitations.” *Cardiac Pacemakers, Inc. v. St. Jude Medical, Inc.*, 296 F.3d 1106, 1113-14 (Fed. Cir. 2002); *see also Lockheed Martin Corp. v. Space Sys./Loral, Inc.*, 249 F.3d 1314, 1324 (Fed.Cir.2001). “It is improper to narrow the scope of the function beyond the claim language” and “[i]t is equally improper to broaden the scope of the claimed function by ignoring clear limitations in the claim language.” *Cardiac Pacemakers*, 296 F.3d at 1113-14.

The claim language at issue recites: “a *slip means* disposed on the mandrel for grippingly engaging the wellbore when set into position....”<sup>2</sup> Accordingly, the function of the claimed “slip

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<sup>2</sup> Although the court is reluctant to adopt a construction different from that adopted by Judge Godbey, Judge Godbey construed U.S. Patent No. 5,224,540. *See Halliburton Energy Servs., Inc. v. Weatherford Int'l, Inc.*, No. 3:07-cv-2144-N, Dkt. No. 146. As will be seen, the claim language of the ’279 Patent bears heavily on the court’s analysis of this claim term. The undersigned will, therefore, undertake an independent evaluation of the issue.

means” is identified in the claim language as “grippingly engaging the well bore when set into position.” Having carefully reviewed the briefing, the court is not convinced that Weatherford has rebutted the presumption of means-plus-function drafting in this case. As such, the court rejects Weatherford’s argument that the term “slip means” is exempt from § 112, ¶ 6. Having carefully reviewed the specification, the court concludes that slip segments 18, with inserts 34, are the structures clearly linked to the function of “grippingly engaging the well bore when set into position.” *See, e.g.*, ’279 Patent at 3:53-56; 4:1-6; 8:3-13.

The court rejects the argument that the “slip means” of Claim 1 of the ’279 Patent necessarily includes all of the components identified in column 3, lines 58-64. That section provides:

The slip means comprises a slip wedge positioned around the center mandrel, a plurality of slip segments disposed in an initial position around the mandrel and adjacent to the slip wedge, retaining means for holding the slip segments in an initial position.

*Id.* at 3:58-64. Claim 1, however, merely requires “a slip means disposed on the mandrel for grippingly engaging the wellbore when set into position.” On the other hand, Claim 12 requires “a first plurality of upper slip segments ..., the upper slip segments being restrained *in an initial position by a retaining means*, the upper slip segments ... forming an upper slip means for grippingly engaging the wellbore when set into position...” (emphasis added). Considering the claim language, if the court were to require that the structure of the “slip means” necessarily includes a retaining means, as proposed by Halliburton, the court’s construction would appear to render Claim 12’s requirements of a “retaining means” and “in an initial position” superfluous.

Furthermore, Claim 9 recites:

[t]he apparatus of claim 1 wherein the slip means comprises: a plurality of slip segments *and an associated slip wedge* being located proximate to an end most portion of a packer element assembly, each of the slip segments having a planar

bearing surface and the associated slip wedge having a corresponding planar bearing surface for the planar bearing surface of each slip segment.

And element “d” of Claim 12 requires “*a non-metallic upper slip wedge* encircling and slidable along a portion of the mandrel.” Halliburton contends that the “slip wedge” should be included in the structure corresponding to the “slip means.” But reading a “slip wedge” limitation into Claim 1 would again appear to render portions of Claim 9 and 12 superfluous because both of those claims appear to require a “slip wedge” as an additional limitation.

As the Federal Circuit has noted, substantive differences between claims can be a “useful guide in understanding the meaning of particular claim terms.” *Phillips*, 415 F.3d at 1314; *see Curtiss-Wright Flow Control Corp. v. Velan, Inc.*, 438 F.3d 1374, 1381 (Fed. Cir. 2006). Indeed, “claim differentiation takes on relevance in the context of a claim construction that would render additional, or different, language in another independent claim superfluous ....” As such, considering the claim language discussed above, the court rejects Halliburton’s attempt to read the retaining means and slip wedge limitations into Claim 1 via the court’s construction of “slip means.”

In conclusion, the court adopts the following construction of “slip means:” (1) the function is “grippingly engaging the well bore when set into position;” (2) the corresponding structure is “slip segments 18 with inserts 34.”<sup>3</sup>

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<sup>3</sup> Although Weatherford contends that the corresponding structure does not necessarily include inserts 34, it appears that the corresponding structure disclosed in the specification requires such inserts. The Summary of the Invention explains that “...the slips are separated so that they can be moved into gripping engagement with the well bore. Hardened inserts may be molded into the slips.” ’279 Patent at 4:2-4. The Description of the Preferred Embodiment states that “[p]referably, slip segment 18 ... has an outer external face 19 in which at least one and preferably a plurality of inserts 34 have been molded into, or otherwise secured into, face 19.” *Id.* at 8:3-6. Considering this, the court concludes that the slip segments corresponding to the function of “grippingly engaging the well bore when set into position” include inserts 34.

#### **IV. CONCLUSION**

The court adopts the constructions set forth in this opinion for the disputed terms of the '279 Patent. The parties are ordered that they may not refer, directly or indirectly, to each other's claim construction positions in the presence of the jury. Likewise, the parties are ordered to refrain from mentioning any portion of this opinion, other than the actual definitions adopted by the court, in the presence of the jury. Any reference to claim construction proceedings is limited to informing the jury of the definitions adopted by the court.

It is so ORDERED.

SIGNED this 5th day of August, 2011.



Charles Everingham  
CHARLES EVERINGHAM IV  
UNITED STATES MAGISTRATE JUDGE